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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/652,027	09/02/2003	Do-Hoon Kwon	249/405	1546
27849	7590	11/03/2004	EXAMINER	
LEE & STERBA, P.C. 1101 WILSON BOULEVARD SUITE 2000 ARLINGTON, VA 22209			A, MINH D	
			ART UNIT	PAPER NUMBER
			2821	

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/652,027

Applicant(s)

KWON, DO-HOON

Examiner

Minh D A

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7, 8 and 10 is/are rejected.
- 7) ☒ Claim(s) 4, 6 and 9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9/2/03</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 5, 7-8 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Brown et al (US 5,923,299) in view of Brooker (WO 95/32529).

Regarding claim 1, Brown disclose a biconical antenna (20) for wireless communications, comprising: a conical upper conductive body (26) and a conical lower conductive body(24) having a common apex, which is used as a power feed point (21) wherein a space between the conical upper(26) and lower conductive bodies (24) is filled with a dielectric material(33) such that a shortest distance connecting the conical upper(26) and lower conductive bodies (24) along a surface of the dielectric material(33) is a curve at which an angle (θ) of wave on the surface of the dielectric material(33) through the dielectric material(33) from the common apex (feed point (21)). However, it is noted that, Brown does not disclose an angle is a Brewster angle over the entire surface of the dielectric material. See all elements on figures 5-8, col.5, lines 40-67 to col.11, lines 1-30.

Brooker discloses an angle is a Brewster angle over the entire surface of the dielectric material. See col.2, lines 9-29 to col.3, lines 1-18.

It would have been an obvious to one of ordinary skill in the art at the time the invention was made to employ an Brewster angle such as that suggested by Brooker in a biconical antenna of Brown to provide a dielectric transition which maintains a good impedance match across the transition and allows operation at fast pulse rise time for short duration at high voltage.

Regarding claim 2, Brown essentially discloses the claimed invention but does not explicitly disclose that a log spiral curve. It would have been an obvious matter of design choice to employ Brown 's antenna in order to maximize the usage of his invention, since applicant does not disclose that, a log spiral curve can solve any stated problem and for any particular purpose. Therefore, it appears that the invention would not provide any improvement but merely apply the invention in different presentation.

Regarding claim 3, Brown inherently discloses wherein a dielectric constant of the dielectric material is between about 4 - 50. Because, Brown discloses that, the dielectric material having a dielectric constant and the dielectric constant can be any 4-50 and so on.

Regarding claims 5 and 8, Brown discloses wherein a length of the conical upper conductive body is shorter than a length of the conical lower conductive body. See col.6, lines 45-56.

3. Regarding claims 7 and 10, Brown discloses wherein the conical upper conductive body (26) is extended beyond the surface of the dielectric material (33). See figures 5-8.

Allowable Subject Matter

Claims 4, 6 and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

The prior art does not teach that, the dielectric material is selected from the group consisting of high-density glass, dielectric ceramic, and engineering plastic or the length of the conical upper conductive body is at least $\lambda/4$, wherein λ is a wavelength when a usable impulse is the minimum frequency recited in dependent claims 4, 6 and 9.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sharp et al (US 5,990,845) and Josypenko. (US 6,268,834) are cited to show a bicone antenna.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Minh A whose telephone number is (571) 272-1817. The examiner can normally be reached on M-F (5:30 –2:30 PM).

If attempts to reach the examiner by telephone is unsuccessful, the examiner's supervisor, Don Wong, can be reached on (571) 272-1834. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and (703) 872-9319 for final communications.

Art Unit: 2821


Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center receptionist whose telephone number is (571) 272-1553.

Examiner

Minh A

Art unit 2821

10/29/04


Don Wong
Supervisory Patent Examiner
Technology Center 2800